

IN THE SPECIFICATION (as originally filed):

On page 1, line 1 the title has been changed as follows:

~~CUTTING DEVICE FOR TAKING CARE OF LAWNS
AND THE COUNTRYSIDE, COMPRISING A DEVICE
FOR RECEIVING AND COMMINUTING CUT ITEMS~~
DEVICE AND METHOD FOR MOWING AND PICKING UP CLIPPINGS

Page 1, immediately following the title, please insert the following:

CROSS REFERENCE TO RELATED APPLICATION

This is the U.S. national phase of International Application No. PCT/DE03/02141
filed June 27, 2003, the entire disclosure of which is incorporated herein by reference.

BACKGROUND OF THE INVENTION

The heading on page 1, line 5 has been changed as follows:

~~Description~~ Field of the Invention

The paragraphs beginning on page 1, line 7 have been changed as follows:

The invention relates to a method and to a device for picking up and comminuting clippings in a mowing unit used for taking care of lawns and fields, ~~whereby~~ wherein the mowing unit ~~comprises~~ includes at least one mowing assembly ~~consisting of~~ with at least one mowing aggregate.

Related Technology

In the care of lawns and fields, self-propelled mowing units ~~consisting of~~ including a tractor with a seat and several mowing assemblies are normally employed to mow large

lawns and meadows. Typically, the mowing assemblies have rotating cutting means such as blades which cut the grass that is to be mowed. The cut grass is then either left behind on the ground and has to be picked up and hauled away in additional work steps, or else the mowing unit has a device for picking up the clippings. Normally, such mowing units have collecting containers for the picked-up grass.

The paragraph beginning on page 1, line 23 has been changed as follows:

German Preliminary Published Application No. 199 53 380 discloses a self-propelled mowing unit with several mowing assemblies. The mowing assemblies ~~consist of~~ include several mowing aggregates arranged next to each other and having horizontally rotating blades. A so-called processing element is arranged along the individual mowing aggregates. The function and configuration of this processing element are not described.

On page 3, after line 22 please insert a heading as follows:

GENERAL DESCRIPTION

The paragraphs beginning on page 3, line 23 have been changed as follows:

The ~~objective of the invention is to further develop~~ develops a device of the generic type for taking care of lawns and fields in such a way that it produces dried clippings having a low volume.

According to the invention, ~~this objective is achieved in that~~ the device has a chopping device that picks up, comminutes and feeds clippings produced by at least one mowing aggregate to a discharge device, whereby ~~the~~ a rotating axle of the chopping device is at an angle relative to the rotating axle of the mowing aggregate.

The ~~objective is also achieved in that the~~ plants being mowed are cut by cutting means of at least one mowing aggregate, after which these clippings are sucked in by a chopping device, where they are comminuted and then released in the vicinity of the mowing unit. After they have dried there, they are picked up once again by the chopping device and conveyed to a collecting means.

The paragraph beginning on page 4, line 16 has been changed as follows:

The device for taking care of lawns and fields is preferably a self-propelled mowing unit in the form of tractor with a seat. The unit has at least one mowing assembly that is preferably connected pivotally to the tractor by means of one or more axles. In a particularly preferred embodiment of the invention, the unit ~~comprises~~ includes two pivotable mowing assemblies located on the front of the tractor in the forward direction. The two mowing assemblies are preferably arranged in a V-formation. However, additional mowing assemblies can also be provided on the sides or at the back of the vehicle. Moreover, it is not absolutely necessary for the mowing assemblies to be pivotable, but rather, the chopping device ~~according to the invention~~ can also be installed in conventional, non-pivotable mowing assemblies.

The paragraph beginning on page 5, line 20 has been changed as follows:

In a particularly preferred embodiment ~~of the invention~~, a cover extends above each of the mowing aggregates of a mowing assembly. In order for the clippings not to be squashed between the cutting means and the cover, this cover is positioned at a certain minimum distance from the rotating cutting means of the aggregates. In the area of the chopping device, the appertaining cover has a cutout in order to allow the clippings to be picked up in the chopping device.

On page 6, after line 14 please insert a heading as follows:

BRIEF DESCRIPTION OF THE DRAWINGS

The paragraph beginning on page 6, line 15 has been changed as follows:

Additional advantages, special features and advantageous refinements of the invention ~~ensue~~ follow from the ~~subordinate~~ appended claims and from the ~~presentation below~~ description of preferred embodiments that make reference to the figures.

On page 7, after line 2 please insert a heading as follows:

DETAILED DESCRIPTION

The paragraphs beginning on page 7, line 3 have been changed as follows:

Figure 1 shows a schematic top view of a particularly preferred embodiment of the invention. This is a mowing device for taking care of lawns and fields in the form of a self-propelled mowing unit (e.g., tractor) 10 that preferably has a seat. The unit has at least one mowing assembly that is coupled to the tractor 10. The device according to the invention, however, can also be attached as an add-on component to conventional mowers.

In the especially preferred embodiment of the invention ~~being presented~~, the unit ~~comprises~~ includes two mowing assemblies that are linked to the front of the tractor 10 in a V-formation. In order to configure the mowing unit to be employed for taking care of lawns and fields in a manner that is as compact and maneuverable as possible, it has proven to be advantageous for the tractor not to exceed the height of two meters, even with any add-on components such as collecting containers or discharge devices. The width can be selected at

will and preferably lies in the order of magnitude of 1.50 m to 2.20 m. Naturally, depending on the area of application, larger or smaller dimensions are likewise conceivable.

The paragraphs beginning on page 8, line 24 have been changed as follows:

The mowing assemblies employed each ~~comprise~~ include at least one mowing aggregate 20 made up of one or more cutting means. In the embodiment shown, the mowing unit has one mowing assembly with three aggregates and one mowing assembly with two aggregates, whereby the aggregates are positioned next to each other and the mowing aggregate in the middle belongs to both mowing assemblies. The cutting means are advantageously rotating blades. Here, the cutting means rotate around an axle 21 perpendicular to the surface of the ground being mowed. Typical diameters for a mowing aggregate range from 30 cm to 80 cm, so that the above-mentioned V-formation of the mowing assemblies with four aggregates results in a mowing width ranging from 90 cm to 250 cm.

In a particularly preferred embodiment ~~of the invention~~, the chopping device 30 ~~according to the invention~~ used for comminuting and drying the clippings is located above the mowing aggregate 20 of a mowing assembly, so that the clippings enter the chopping device 30 from below, where they are then processed. The device, however, can also be positioned as desired relative to the mowing assemblies insofar as this is appropriate for the envisaged application purpose. For instance, it can also be located next to the mowing assemblies. In the embodiment shown, the chopping device 30 extends above the center aggregate on the vehicle axle and the first mowing aggregate of a mowing assembly.

The chopping device 30 is configured in such a way that its chopping means 40 rotate around an axle 50 that lies essentially perpendicular to the rotating axle 21 of the cutting means of the mowing aggregates 20. In this context, the term “essentially” ~~comprises~~

includes angles ranging from 60° to 90° between the axle of the cutting means and the axle of the chopping means. The chopping means 40 are advantageously suitably shaped chopper blades or chopper flails that ensure a thorough comminution of the clippings.

The paragraph beginning on page 10 has been changed as follows:

In an especially preferred embodiment ~~of the invention~~, a cover 70 extends over each of the mowing assemblies. In order for the clippings not to be squashed between the cutting means and the cover, this cover is positioned at a certain minimum distance from the rotating cutting means of the aggregates 20. In the area of the chopping device 30, the appertaining cover has a cutout in order to allow the clippings to enter the chopping device. The housing 60 of the chopping device 30 and the cover 70 can be connected to each other and can be made, for example, in one piece.

The paragraph beginning on page 11, line 5 has been changed as follows:

In order to attain a constant height, typical mowing aggregates have several rollers distributed on their rim which then keep the cutting means at the set height. This has the drawback that, for instance, when the mowing unit leaves a grassy area and drives over a curb, one or more rollers already tip over the edge of the curb while the other rollers are still on the grassy area, with the result that the cutting means of the mowing aggregate in question can strike the edge of the curb and can be damaged. Therefore, the invention provides for the height setting of a mowing aggregate to be configured with only one height guide that is preferably located in the middle, underneath the aggregate. This height guide can be connected, for example, to a chute surrounding the rotating axle 21 of the mowing aggregate 20 in such a way that the height can be set from the driver's seat. The guide itself can be configured as a ~~caster~~ caster, roller, rail, ball or other element that can easily move over the

ground without readily wearing down or becoming blocked. Such height guides 26 are shown in Figure 4.

The paragraph beginning on page 12, line 2 has been changed as follows:

Figure 2 shows a schematic side view of the chopping device 30 according to the invention. In this particularly preferred embodiment ~~of the invention~~, the chopping device 30 extends above two mowing aggregates. Above the mowing aggregates, there is at least one cover 70, whereby the cover 70 is preferably partially formed with an outer rim 71 that serves to keep the clippings under the cover. For this purpose, the outer rim extends along the side of the tractor, while the cover is open in the forward direction. In the area of the chopping device 30, the cover has a cutout so that the clippings can be sucked into the device. The housing 60 of the chopping device and the cover 70 can be connected to each other and can be designed, for instance, as a single piece.

IN THE ABSTRACT:

Please add an abstract as follows:

The invention relates to a device for receiving and comminuting cut items in a mowing unit for taking care of lawns and the countryside. The cutting unit comprises at least one cutting system which is made up of at least one cutting unit. The invention is characterized in that the device comprises a chopping machine which receives, comminutes and transfers cut items into an ejecting unit, said cut items being produced by at least one cutting unit. The rotational axis of the chopping machine is inclined in relation to the rotational axis of the cutting unit.